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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/016,784	11/30/2001	Bin Zhao	12569-14/NEC	4490

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EXAMINER
JUBA JR, JOHN

ART UNIT	PAPER NUMBER
2872	

DATE MAILED: 12/12/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/016,784	ZHAO, BIN	
	Examiner	Art Unit	
	John Juba	2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14 and 16-18* is/are rejected.

7)☒ Claim(s) *15* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 November 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Information Disclosure Statement

As a matter of course, the examiner has considered all of the references in parent application serial number 09/ 876,647 that were of record as of December 10, 2002. If Applicant wishes these references to be listed on the front of any patent issuing from the instant application, then a list of such references should be submitted in accordance with 37 CFR 1.98 (a)(1).

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the second interleaver and its arrangement with respect to polarizer (12) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

Claim 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 18 tabulates values from which the angular orientations and phase delays "are selected". First, it is not clear that each of the recited angles corresponds in order to each of the recited first stage phase delay. Secondly, since not all of the angular orientations are stated in ascending order, it is not clear in what order the phase delays are to be arranged. Thirdly, since there is no positive recitation of each of the stages as comprising three elements, it is not clear how many times each of the recited values may be used. When read in light of the specification (para. [0090]), it appears that the third element can be omitted with "similar results" obtained. Fourthly, since there is no clear designation of designs along the ordinate, it is not clear whether a value for each column may, at the same time, be selected from any row. For example, may the set of first stage phase delays in the first row be used with the set of second stage phase delays in the second row?

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The foregoing is a quotation of the appropriate paragraph of 35 U.S.C. § 102(e) in view of the AIPA and H.R. 2215 that forms the basis for the rejections under this section made in the attached Office action. See attachment.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Buhrer (U.S. Patent number 4,988,170). [Since the claims are identical, this rejection is as set forth in parent application serial number 09/876,647.] Referring to Figure 5 and the associated text in Column 8 (esp. lines 35 – 55), Buhrer discloses a pair of polarization selection elements (54) (59) and a birefringent assembly (56) (58) disposed intermediate the selection elements, wherein the birefringent assembly is configures to a provide a dispersion vs. wavelength curve which mitigates dispersion within the rotators (55) (57).

Claims 1 – 14 and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Sharp, et al (U.S. Patent number 5,929,946). Referring *primarily* to the design procedure in Column 5 (lines 45 – 60), the two illustrative designs in Figures 5 and 6, and the associated text in Column 14, Sharp, et al disclose the recited method steps, including providing input and output polarization selection elements (40) (50), providing a first set of three elements (21)(22)(23) and determining their orientations, further, determining two alternate sets of orientations for a second set of three elements (31a)(32a)(33a), selecting a set of second orientations, and arranging the first and second sets as recited. Although Sharp, et al refer to the sets as retarder stacks, rather than "interleavers", it will be appreciated that the stacks have a periodic response, however widely spread over the electromagnetic spectrum, whereby they fairly

constitute "interleavers" within the specificity recited. Insofar as Sharp, et al disclose every positively recited method step, it is believed that the method results in a "low dispersion" interleaver assembly, as recited.

With regard to claims 4 and 5, Sharp, et al disclose that the spectral characteristics can be tuned by "fine tuning of the angles "(Col. 15, lines 45 – 50). It will be appreciated that this involves variation of the fast axis of at least one of the birefringent elements.

With regard to claims 7 – 10, 12, 13, and 16, the assembly has all of the positively recited structure (Col. 14, lines 7 – 18), and is thus believed to mitigate dispersion in the same manner as the recited structure. Although Sharp, et al disclose that the "order is reversed", the retardances are identical, and thus indistinguishable from one another. Thus, the prior art structure is indistinguishable for the claimed structure in which the retardances are recited as being in the same order.

With regard to claims 11 and 14, referring to the "5" retarder design in Table II of Sharp, et al, a first stage has retardances 2Γ, 2Γ, Γ, while the second stage has retardances Γ, 2Γ, and 2Γ.

Claims 1 – 3, 6, 7 is rejected under 35 U.S.C. 102(e) as being anticipated by Cheng, et al (U.S. Patent number 6,396,609). Referring *for example* to Figure 11 and the associated text, Cheng, et al disclose dispersion compensating birefringent filter comprising first (10) and second (900) polarization selection elements. The assembly further comprises first (30) and second (960) "interleavers", each comprising three

birefringent elements, wherein the dispersion versus wavelength characteristic of the first interleaver is effectively canceled with the dispersion versus wavelength characteristic of the second interleaver.

With regard to claim 7, the angular orientations are related, and dispersion is mitigated. The examiner believes the two conditions cannot be decoupled. Thus, the orientations must be related in the manner such that dispersion is mitigated.

Claims 1 - 3, 6, 7, 10, 16, and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Wang, et al (U.S. Patent number 6,441,960). Referring *for example* to Figures 4A – 4C, and Figure 7 along with associated text, Wang, et al disclose a first (403) and second (407) "interleaver" wherein the dispersion versus wavelength characteristic of the first interleaver is effectively cancel with the dispersion versus wavelength characteristic of the second interleaver. The channel spacing is 50 GHz.

With regard to claim 7, the angular orientations are related, and dispersion is mitigated. The examiner believes the two conditions cannot be decoupled. Thus, the orientations must be related in the manner such that dispersion is mitigated.

With regard to claim 16, the examiner relies upon the prior art disclosure of phase delays of 1860 waves and 3720 waves in the first stage, 1860 waves and 3720 waves in the second stage, and the related angular orientations of 45°, -15°, 45°, and –15°, respectively. There is no positive recitation of any of the stages as comprising a third phase delay or third angular orientation. Thus, the first stage has angular

orientations $\varphi_1 = 45°$, $\varphi_2 = -15°$, while the second stage has angular orientations $\varphi_3 = 45°$, and $\varphi_4 = -15° = \varphi_2$. The claim does not preclude the possibility that $\varphi_3 = \varphi_1$.

Allowable Subject Matter

Claim 15 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 18 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action. The following is a statement of reasons for the indication of allowable subject matter: The prior art, taken alone or in combination, fails to teach or to fairly suggest, *in combination,*

the particular arrangements of phase delays and angular orientations recited in claims 15 and 18. In reading the table of claim 18, it has been understood that, in a given row, the recited second stage orientations for the parallel component must be satisfied while *at the same time,* the second stage orientations for the orthogonal component must be satisfied. Similarly, claim 15 has been understood to require that the recited second stage orientations for the parallel component must be satisfied while *at the same time,* the second stage orientations for the orthogonal component are satisfied.

Doubl Patenting

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

Claims 1 – 9 and 17 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1 – 9 and 18 (respectively) of copending Application No. 09/876,647. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 18 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 3 of copending Application No. 10/016,166. Although the conflicting claims are not identical, they are

not patentably distinct from each other because the instant claims are related to the copending claims as process of making and product made.

The inventions would be distinct only if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the process as claimed results only in the product as claimed, and the product as claimed can only be made by the process as claimed. Thus, it is seen that both claims are drawn to different statutory classes of the same invention. Since the product can be made through no other process, the process is an obvious process to arrive at the claimed product.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Tai, et al disclose an interleaver with the optical paths arranged to minimize dispersion.

As an intervening reference, JDS Uniphase (EP 1 152 265 A2) disclose a dispersion compensated interleaver comprising birefringent elements.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Juba whose telephone number is (703) 308-4812. The examiner can normally be reached on Mon.-Fri. 9 - 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cassandra Spyrou can be reached on Mon.- Thu., 9 - 5. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

John Juba
Examiner, GAU 2872

December 11, 2002

Attachment

Recent Statutory Changes to 35 U.S.C. § 102(e)

On November 2, 2002, President Bush signed the 21st Century Department of Justice Appropriations Authorization Act (H.R. 2215) (Pub. L. 107-273, 116 Stat. 1758 (2002)), which further amended 35 U.S.C. § 102(e), as revised by the American Inventors Protection Act of 1999 (AIPA) (Pub. L. 106-113, 113 Stat. 1501 (1999)). The revised provisions in 35 U.S.C. § 102(e) are completely retroactive and effective immediately for all applications being examined or patents being reexamined. Until all of the Office's automated systems are updated to reflect the revised statute, citation to the revised statute in Office actions is provided by this attachment. This attachment also substitutes for any citation of the text of 35 U.S.C. § 102(e), if made, in the attached Office action.

35 U.S.C. § 102(e), as revised by the AIPA and H.R. 2215, applies to all qualifying references, except when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. For such patents, the prior art date is determined under 35 U.S.C. § 102(e) as it existed prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. § 102(e)).

The following is a quotation of the appropriate paragraph of 35 U.S.C. § 102 prior to the amendment by the AIPA that forms the basis for the rejections under this section made in the attached Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

For more information on revised 35 U.S.C. § 102(e) visit the USPTO website at www.uspto.gov or call the Office of Patent Legal Administration at (703) 305-1622.